

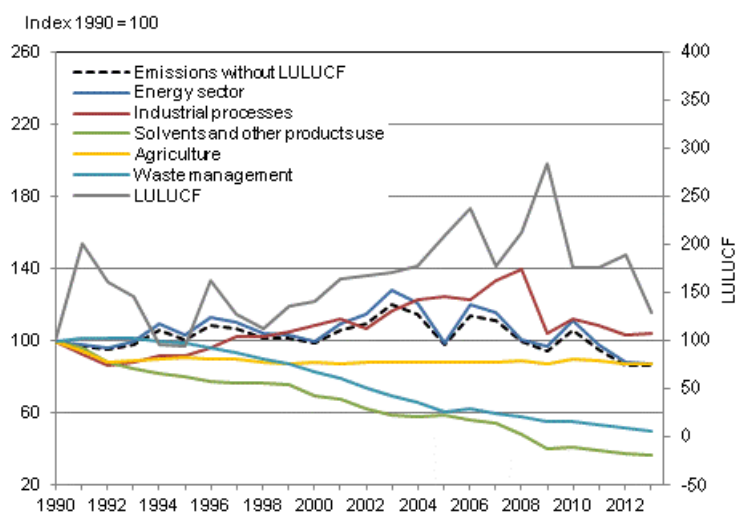
Greenhouse gases

2013, proxy estimate

Finland's greenhouse gas emissions have remained low

According to Statistics Finland's proxy estimate, the total emissions of greenhouse gases in 2013 corresponded with 60.6 million tonnes of carbon dioxide. The emissions remained almost unchanged from the year before. In the energy sector, the use of hard coal increased but the consumption of peat, oil and natural gas decreased. In 2013, emissions outside the emissions trading scheme were around six per cent below the target set by the EU. The net sink of the Land Use, Land-Use Change and Forestry (LULUCF) sector has decreased by one-third as a result of increased fellings.

Development of greenhouse gas emissions by sector in Finland in 1990–2013. The data concerning 2013 are preliminary



Statistics Finland releases proxy estimate on greenhouse gas emissions in 2013 by sector and broken down between emissions trading scheme sources and non-emissions trading scheme sources. In addition, Statistics Finland has estimated regional non-emissions trading scheme emission data by municipality and region and emissions trading scheme emission data by region for 2010 to 2012 based on where they were generated. More information on greenhouse gas emissions, their development and factors affecting the development, as well as the fulfilment of international obligations can be found in Statistics Finland's report [Finland's greenhouse gas emissions in 1990 to 2012](#) (only in Finnish).

Finland's greenhouse gas emissions by sector (million tonnes of CO₂ eq.). Negative figures indicate removal of greenhouse gases from the atmosphere

		1990	1995	2000	2005	2008	2009	2010	2011	2012	2013 ¹⁾
Emissions excl. LULUCF sector		70.3	70.8	69.2	68.6	70.1	66.0	74.4	66.9	61.0	60.6
	Energy sector	54.5	56.0	54.4	54.0	54.7	52.7	60.5	53.3	47.8	47.5
	Domestic transport	12.8	12.0	12.8	13.7	13.6	12.9	13.4	13.2	12.7	12.8
	Other than transport	41.7	44.1	41.6	40.3	41.2	39.8	47.1	40.1	35.1	34.7
	Industrial processes	5.1	4.7	5.6	6.4	7.2	5.4	5.8	5.6	5.3	5.4
	Industrial processes (excl. F-gases)	5.0	4.6	5.0	5.4	6.1	4.4	4.6	4.5	4.3	4.3
	Consumption of F-gases ²⁾	0.1	0.1	0.6	0.9	1.1	0.9	1.2	1.1	1.0	1.0
	Solvents and other products use	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
	Agriculture	6.5	6.0	5.8	5.7	5.8	5.7	5.9	5.8	5.7	5.7
	Waste management	4.0	3.9	3.3	2.4	2.3	2.2	2.2	2.1	2.1	2.0
LLULUCF sector³⁾		-13.7	-12.8	-19.2	-28.6	-29.0	-38.8	-24.1	-24.1	-25.9	-17.6

1) Proxy estimate

2) F-gases refer to fluorinated greenhouse gases (HFC, PFC compounds and SF₆)

3) LULUCF refers to the land use, land use change and forestry sector

Monitoring of mandatory emission reduction targets set by the EU

The monitoring of the effort sharing decision of the EU's climate change package requires emissions data to be broken down to non-emissions trading scheme emissions and emissions trading scheme emissions. Annual emission limitations or reductions have been set for non-emissions trading scheme emissions and emissions trading scheme emissions. The Energy Authority reports the emissions trading scheme emissions to the EU Commission that monitors the fulfilment of the reduction targets. Non-emissions trading scheme emissions are calculated as the difference between the total emissions of the inventory and the emissions trading scheme emissions. In addition, the carbon dioxide emissions from domestic civil aviation are deducted from the non-emissions trading scheme emissions in the monitoring of the effort sharing decision.

Emissions trading scheme emissions grew by close on seven per cent in 2013 compared to the previous year partially due to emissions trading being expanded into new activities. In sectors outside the emissions trading scheme (e.g. use of fuel in heating of buildings, transport excl. civil aviation, agriculture, waste management and consumption of F-gases) emissions in turn decreased by good seven per cent.

Greenhouse gas emissions and removals broken down between emissions trading scheme sources and non-emissions trading scheme sources in 2005 and 2008 to 2013 (million tonnes CO₂ eq.). Negative figures indicate removal of greenhouse gases from the atmosphere

	2005	2008	2009	2010	2011	2012	2013 ⁴⁾	Change, 2012–2013
Total excl. LULUCF sector	68.6	70.1	66.0	74.4	66.9	61.0	60.6	-0.3
Emissions trading scheme emissions ¹⁾	33.1	36.2	34.4	41.3	35.1	29.5	31.5	2.0
Non-emissions trading scheme emissions ²⁾	35.5	34.0	31.6	33.1	31.8	31.5	29.1	-2.3
Non-emissions trading scheme emissions excluding CO ₂ emission from domestic civil aviation	35.2	33.7	31.4	32.9	31.5	31.3	28.9	-2.3
LULUCF sector³⁾	-28.6	-29.0	-38.8	-24.1	-24.1	-25.9	-17.6	8.3

1) Source: Energy Authority. In 2013, emissions trading was expanded with new sectors

2) Also includes the emissions of domestic civil aviation, although the emissions in question are in the emissions trading scheme of the EU's internal civil aviation

3) The land use, land-use change and forestry (LULUCF) sector does not come under the scope of the emissions trading scheme or the reduction targets of effort sharing

4) Proxy estimate

In the effort sharing decision, the target for Finland non-emissions trading scheme emissions is a reduction obligation of 16 per cent between the emissions in 2005 and the emissions in 2020. Between 2013 and 2020, the emissions must be on the so-called target path or below it. The path is linear and its starting point is the average of emissions from non-emissions trading scheme sources in 2008 to 2010 and its final point is the target for emissions reduction by 2020. Because emissions outside the non-emissions trading scheme emissions are calculated as the difference between reviewed total emissions and emissions trading scheme emissions, the effects from emissions that are moved into the emissions trading scheme in 2013 have also been taken into consideration when determining the path. Finland's emissions volume for 2013 according to the target path is thus around 31.0 million tonnes of carbon dioxide equivalent (CO₂ eq.). According to the proxy estimate, the actual emissions are two million tonnes of carbon dioxide equivalent (CO₂ eq.) below the target level.

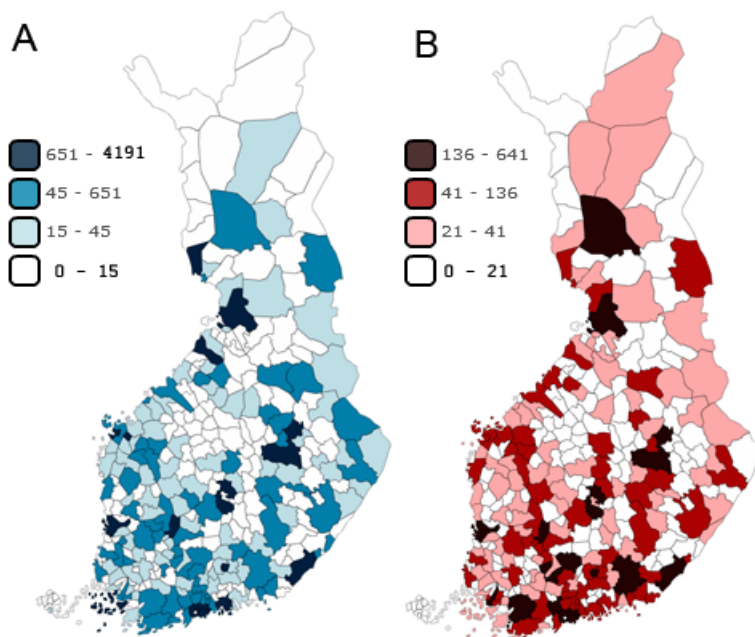
The calculation of proxy emissions is carried out at a less detailed level than the final inventory calculation for 2013. Reporting and method instructions for the greenhouse gas inventory and the GWP (global warming potential) coefficients used in commensurating different greenhouse gases will change in the 2015 inventory delivery. The emission data presented here have been calculated using old methods to ensure the comparability of the time series. The official emissions data for 2013 must be reported to the UNFCCC by 15 April 2015, when the entire greenhouse gas emission time series 1990 to 2013 will be updated with the new instructions and GWP coefficients.

Regional data on emissions

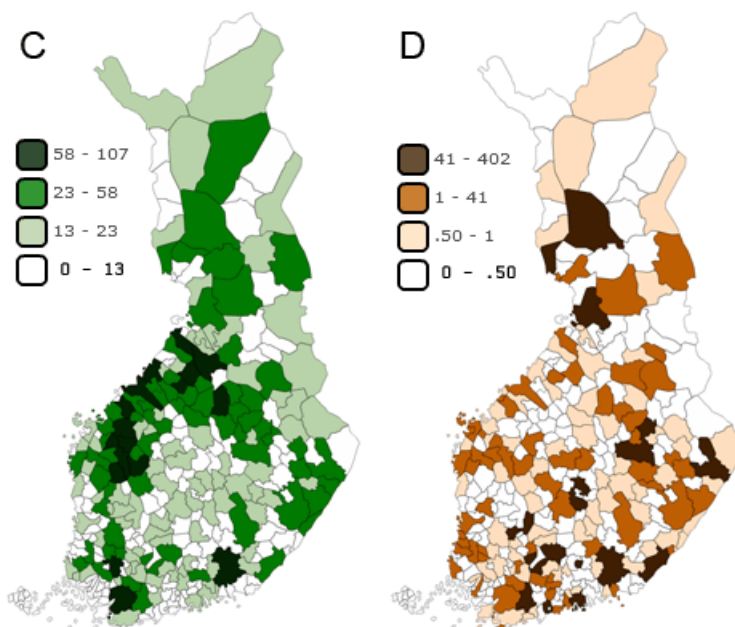
Statistics Finland's calculations have been performed for the years 2010 to 2012 from the so-called region-based perspective, i.e. emissions have been allocated to their areas of origin. The data have been calculated with methods consistent with the greenhouse gas inventory by allocating emissions to regions on the basis of data on activity by municipality. The data have been separately calculated for the sectors of energy, transport, industrial processes (incl. solvent and other product use), agriculture and waste. The calculations exclude the land use, land-use change and forestry sector (LULUCF). Statistics Finland publishes only numeric data by municipality on the non-emissions trading scheme sectors for confidentiality reasons. Total emission and emissions trading scheme emissions are published on the level of regions. The emissions data can be found in [the database tables](#).

More detailed information in Finnish can be found in the [Quality description](#) and [Methodological description](#) of the statistics.

A) Greenhouse gas emissions from the energy sector and industrial processes by municipality in 2012 (1,000 t CO₂ eq.),
B) Greenhouse gas emissions from transport by municipality in 2012 (1,000 t CO₂ eq.)



C) Greenhouse gas emissions from agriculture by municipality in 2012 (1,000 t CO₂ eq.),
D) Greenhouse gas emissions from the waste sector by municipality in 2012 (1,000 t CO₂ eq.)



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Revisions in these statistics

Revision of the greenhouse gas emissions in Finland (million tonnes CO₂ eq.)

	Statistical year ¹⁾	First release			Previous release	Latest release ⁴⁾	Revision ⁵⁾
		Proxy estimate ²⁾	Preliminary data	Official data ³⁾	15.4.2014	22.5.2014	%
Total emissions	1990			71.1	70.3	70.3	-1.1
	2005		69.3	69.3	68.6	68.6	-0.9
	2008		70.1	70.1	70.1	70.1	0.0
	2009	68.6	66.4	66.3	66.0	66.0	-0.5
	2010	76.0	74.6	74.6	74.4	74.4	-0.2
	2011	67.3	66.8	67.0	66.9	66.9	-0.2
	2012	61.4	60.9	61.0	61.0	61.0	0.0
	2013	60.6 ⁷⁾				60.6 ⁷⁾	
Non-emissions trading sector ⁶⁾	2005			36.2	35.5	35.5	-1.8
	2008			34.0	34.0	34.0	0.0
	2009			32.0	31.6	31.6	-1.1
	2010			33.3	33.1	33.1	-0.5
	2011	32.2	31.7	31.9	31.8	31.8	-0.5
	2012	31.9	31.4	31.5	31.5	31.5	0.0
	2013	29.1 ⁷⁾				29.1 ⁷⁾	

1) The revisions to the 1990 amount of emissions have been calculated based on the assigned amount confirmed in the review of the report on the first commitment period under the Kyoto Protocol compiled in 2006, the revisions for all other years have been calculated on the official figures of the year in question

2) Proxy estimate figures have been calculated using different methods than the preliminary and official figures

3) The official figures are amounts that have been reported under the Climate Convention and the Kyoto Protocol for the years in question

4) The emission figures for greenhouse gas inventory are revised every year in the entire time series, because continuous improvements are made to the inventory, taking into account the international review recommendations of inventories and the development of the scientific basis for emission calculation methods

5) The revision compares figures of the latest release with the figures of the first release

6) Also includes the emissions of domestic civil aviation, although the emissions in question are in the emissions trading scheme of the EU's internal civil aviation

7) Proxy estimate

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Official Statistics of Finland

Environment and Natural Resources 2014

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Source: Greenhouse gas inventory unit, Statistics Finland